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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/573,635

03/28/2006

Yasunori Hattori

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EXAMINER

SAVAGE, JASON L

ART UNIT

PAPER NUMBER

1794

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DELIVERY MODE

12/23/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/573,635	Applicant(s) HATTORI ET AL.	
	Examiner JASON L. SAVAGE	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,5,6 and 7 is/are rejected.
- 7) ☒ Claim(s) 5 and 6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Objections

Claims 5 and 6 are objected to because of the following informalities: Claims 5 and 6 depend from canceled claim 2. The claims have been treated as if they depended from claim 1, however claim 5 would then be a duplicate of claim 3 and claim 6 would be a duplicate of claim 4. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maki'268 (US 2001/0016268) in view of Maki'089 (US 5,789,089) further in view of Iwase et al. (JP 2003-145278 English Machine Translation).

Maki'268 teaches hot-dipped aluminum coated steel sheet which has excellent properties after welding (abs). Maki'268 further teaches that the Al coating comprises Si content of 2 to 13% (abs). Maki'268 also teaches that the bath used to form the Al-Si coating layer contains Fe in an amount up to 2% (par[0090]. Maki'268 does not teach the resultant Fe content in the formed coating layer.

Maki'089 teaches hot-dipped aluminum coated steel sheet which has excellent properties including corrosion resistance and heat resistance (col. 1, ln. 8-14). Maki'089 further teaches that the Al coating comprises Si content of 2 to 15% (col. 7, ln. 42-55).

Art Unit: 1794

Maki'089 also teaches that it is suitable to have Fe of up to 1.2% in the coating which would not adversely affect the corrosion resistance (col. 7, .ln. 57-67). It would been obvious to one of ordinary skill in the art to have applied the teaching of Maki'089 to the invention of Maki'268 and limited the Fe content in the coating to less than 1.2% in order to insure the corrosion resistance in the coating is maintained. As such, the prior art would overlap and thus meet the claim limitations wherein the Fe content is between 0.5-1.2%.

Regarding the limitation that the Al-coated steel sheet is spot welded to an aluminum sheet, the cited prior art does not exemplify an embodiment meeting the claim limitations. However, Iwase teaches spot welding aluminum-plated steel sheets and aluminum sheets are known (abstract). As such, it would have been obvious to one of ordinary skill in the art at the time of the invention to have spot welded the hot-dipped aluminum coated steel sheet of Maki'268 as modified by Maki'089 which has excellent properties after welding to an aluminum sheet since composites of aluminum and aluminum-coated steel sheets are conventional materials joined to form a composite structures by welding.

Regarding the limitation that an area ratio of the joint boundary being 90% or less of Al-Fe, since Maki'268 teaches the same materials and aluminum coating composition containing Si and Fe, the claimed Al-Fe area ratio would fall within the claimed range of 90% or less.

Regarding the limitation that the coating contain the claimed amount of N and an N-enriched surface of the steel substrate, Maki'268 teaches the steel substrate may

Art Unit: 1794

comprise up to 0.010% N (par[0016]). Maki'089 teaches that a steel containing N reacts with the Al coating layer to form a diffusion inhibiting N-enriched layer of AlN at the interface between the steel substrate and coating layer. (col. 10, ln. 26-35).

Although the references do not recite the diffusion inhibiting layer has an N-enriched surface being 3% or more N, since Maki'268 teaches an N concentration in the steel within the range claimed by Applicant and Maki'089 teaches it forms a diffusion inhibiting N-enriched surface, it would be reasonable to assume the N concentration in the N-enriched surface would fall within the claimed range also.

Regarding claims 3-7, Iwase teaches that the Aluminum sheet is JIS5056 Aluminum alloy plate (par[0003]) which contains a maximum of 0.5% Fe and Mg of 4.5-5.6% and Si of 0.3% or less.

Response to Arguments

Applicant's arguments filed 9-18-08 have been fully considered but they are not persuasive.

Rejection of Claims 1-7 over Hattori et al.

Applicant's argument with respect to the prior rejections over Hattori has been withdrawn for the reasoning set forth by Applicant.

Rejection of Claims 1-7 over 35 USC 103(a).

Applicant argues that while Maki discloses that the plating bath may contain 2% of Fe, it does not teach or suggest that the coating layer itself has 2% Fe or any amount of Fe for that matter. However, since Fe is contained within the plating bath, one would

Art Unit: 1794

expect the coating formed from the bath containing Fe would also contain Fe. With regard to how much Fe would be included in the coating, Maki'089 teaches up to 1.2% of Fe can be included so as to not reduce the corrosion resistance. As such, the prior art overlaps the recited range of Fe in the coating between 0.5-1.2%

Applicant further argues that Maki'268 fails to recognize a relationship between the level of Fe in the coating layer and the strength of the weld points between. However, these arguments are not commensurate in scope with the claims as there are no limitations drawn to the strength of the weld points.

Applicant argues that the Examiner provided an unsupported statement to establish a *prima facie* case of obvious for the limitation that it is well known to provide an N-enriched surface. However, Maki'268 teaches an N concentration in the steel sheet within the range claimed and Maki'089 teaches that forming an N-enriched diffusion inhibiting barrier from a substrate containing N is known. As such, the view that the prior art does not provide a teaching or suggestion to form the claimed composite having an N-enriched surface such as claimed is not persuasive.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON L. SAVAGE whose telephone number is (571)272-1542. The examiner can normally be reached on M-F 6:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1794

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jason Savage/
12-16-08

/Jennifer McNeil/
Supervisory Patent Examiner, Art Unit 1794